

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number  
**WO 2005/011348 A1**

(51) International Patent Classification<sup>7</sup>: **H05K 7/14**

(21) International Application Number: \*  
PCT/KR2004/001877

(22) International Filing Date: 26 July 2004 (26.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
10-2003-0051476 25 July 2003 (25.07.2003) KR

(71) Applicant (for all designated States except US): **UTSTAR-COM KOREA LIMITED** [KR/KR]; San 136-1, Ami-ri, Bubal-eub, Icheon-si, Kyongki-do 467-701 (KR).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **SONG, Soo Yong**

[KR/KR]; Cheonggu Apt. 103-802, 559-3 Sinha-ri, Bubal-eub, Icheon-si, Gyeonggi-do 467-863 (KR).

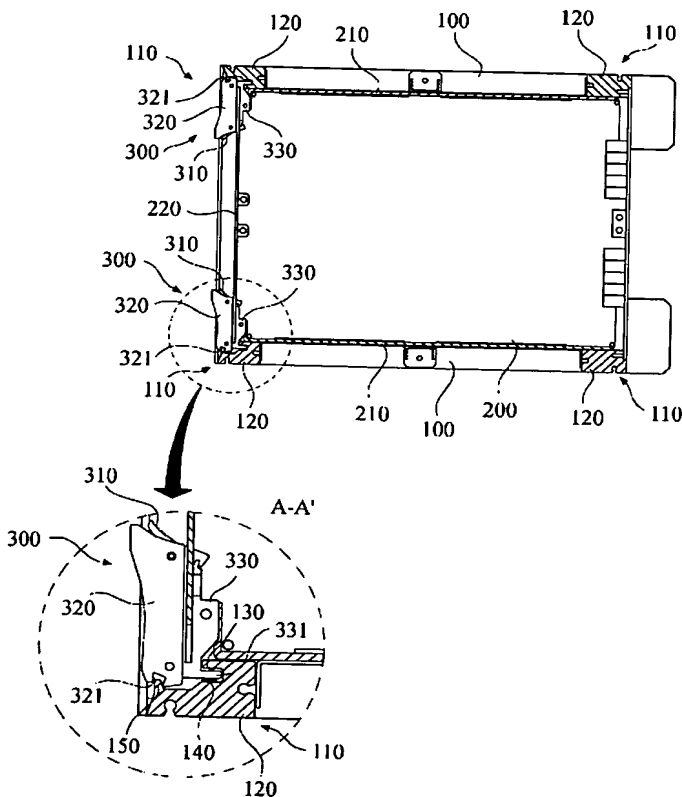
(74) Agent: **YOON, Jee Hong**; Hannuri Bldg., 219, Naeja-dong, Chongno-gu, Seoul 110-053 (KR).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: **INJECTOR/EJECTOR AND SHELF STRUCTURE GROUNDED TO CARD FRAME GROUND**



(57) Abstract: The present invention generally relates to an injector/ejector (in/ejector) and shelf structure grounded to a frame ground of a card, in which electromagnetic and electric waves generated in an electric or electronic device can be conducted outside. More specifically, the present invention comprises: a shelf having a frame, a guide rail and a guide supporter, wherein the frame and the guide rail are established at a given spacing in front and rear portions of upper and lower ends thereof, respectively, in order to provide a framework, and wherein the guide supporter has a common conductivity formed in an inside of both upper and lower parts thereof; a card including a frame ground and a stiffener, wherein the frame ground having conductivity is formed on upper and lower parts thereof, and wherein the stiffener having a rectangular shape is formed on a front part thereof, and wherein the card is mounted on the shelf; and an in/ejector for fixing the card on the shelf, wherein said in/ejector is coupled to upper and lower parts of the stiffener and is grounded to the guide supporter and the frame ground. According to the present invention, communication interference caused by unnecessary electromagnetic waves generated in the electronic device, electric wave of other devices and an external electric wave can be reduced, thereby mitigating the loss of lives and property damage resulting from incorrect operations. Additionally, in conducting radiation test of EMI and static electricity radiation test among the adaptability test of electromagnetic wave for systems, electromagnetic waves can be reduced significantly so that the device

can operate normally under static electricity when the frame grounds on various cards are conducted outside.



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— *with international search report*